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| APPLICATION NO.                       | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/553,185                            | 01/05/2006  | Dominic Baker        | 2979-111            | 2230             |
| 6449                                  | 7590        | 08/04/2008           |                     |                  |
| ROTHWELL, FIGG, ERNST & MANBECK, P.C. |             |                      | EXAMINER            |                  |
| 1425 K STREET, N.W.                   |             |                      | PHILLIPS, FORREST M |                  |
| SUITE 800                             |             |                      |                     |                  |
| WASHINGTON, DC 20005                  |             |                      | ART UNIT            | PAPER NUMBER     |
|                                       |             |                      | 2837                |                  |
|                                       |             |                      |                     |                  |
|                                       |             |                      | NOTIFICATION DATE   | DELIVERY MODE    |
|                                       |             |                      | 08/04/2008          | ELECTRONIC       |
|                                       |             |                      |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

|                              |  |                                     |
|------------------------------|--|-------------------------------------|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/553,185   | <b>Applicant(s)</b><br>BAKER ET AL. |
|                              | <b>Examiner</b><br>FORREST M. PHILLIPS | <b>Art Unit</b><br>2837             |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 29 May 2008.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) 13-18 and 21 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-12, 19, 20 and 22 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/1648)  
Paper No(s)/Mail Date 10/13/2005

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

Claims 13-18 and 21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 5/29/08.

***Claim Objections***

The claims are objected to because they include reference characters which are not enclosed within parentheses.

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims.

See MPEP § 608.01(m).

Claim 5 is objected to because of the following informalities: assumed typographical error in line 3 of claim 3, as presented reads "in particular Al/Be alloys according to claim 3" as there are no alloys disclosed in claim 3, but rather in claim 4 has been treated as reading "... according to claim 4".

Appropriate correction is required.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board

of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitation preferably attached at a certain level, and the claim also recites for example at mid-height which is the narrower statement of the range/limitation.

In the present instance, claim 1 recites the broad recitation acoustic enclosure, and the claim also recites in particular a tweeter or a medium-frequency loudspeaker which is the narrower statement of the range/limitation.

In the present instance, claim 2 recites the broad recitation highly flexible material, and the claim also recites such as foam rubber or soft joints made of rubber or gluing that remains soft which is the narrower statement of the range/limitation.

In the present instance, claim 4 recites the broad recitation among Be alloys, and the claim also recites in particular 20-80% Be by weight, preferably 40-60% Be, in all cases with at least 5% Be which is the narrower statement of the range/limitation.

In the present instance, claim 5 recites the broad recitation aluminum or aluminum alloys, and the claim also recites in particular Al/Be alloys according to claim 3 which is the narrower statement of the range/limitation.

In the present instance, claim 6 recites the broad recitation among magnesium and its alloys with aluminum, and the claim also recites in particular the alloy Al 5056 which is the narrower statement of the range/limitation.

In the present instance, claim 7 recites the broad recitation a thickness of 25 to 100 microns, and the claim also recites in particular one equal to 25 microns which is the narrower statement of the range/limitation.

Regarding claims 2, and 4-5, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 2 contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 2 recites the low resonance frequency is adjustable. Examiner can find no structure in the claims or specification which would allow for adjustability, the structure as disclosed would lead one to believe a flexibility would be selected upon manufacture and not adjusted while in use.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-2, 9, 19 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu (US6394224).

With respect to claim 1 Liu discloses a loud speaker (see figure 4) for an acoustic enclosure, in particular for a tweeter or a medium-frequency loudspeaker, characterized in that it comprises as its dome a spherical membrane (3 in figure 4) with direct radiation, with a front side that is concave in relation to a spool (21 in figure 4) and to which it is attached, so as to achieve optimal mechanical coupling capable of reproducing frequencies lower than 1 kHz with high efficiency (Column 1 lines 20-25).

With respect to claim 2 Liu further discloses wherein the low resonance frequency is adjustable by using a mounted suspension with high compliance, that is to say made of a highly flexible material (4 in figure 4) such as foam rubber or soft joints made of rubber, or gluing that remains soft over time (Column 1 lines 55-60).

With respect to claim 9 Liu further discloses wherein the shape of the dome can be hemispherical or with a complex profile, oval bulbous, or with canted sides (see figure 4, diaphragm is element 3).

With respect to claims 19 and 22 Examiner considers the limitations to be sufficiently discussed in the rejection of claim 1, refer to Column 1 lines 20-25.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US6394224) in view of Inanaga et al (US5062140).

With respect to claim 3 Liu discloses the invention as claimed except wherein the material of the dome is pure beryllium.

Inanaga discloses a dome diaphragm of a speaker that is made of pure beryllium (Column 5 lines 50-63).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Inanaga to use pure beryllium with the dome of Liu to provide a thin but rigid diaphragm to optimize sound transmission.

With respect to claim 4 Inanaga discloses wherein the material of the dome is selected from among Be alloys (Column 5 lines 50-63)

With respect to claim 5 Inanaga further discloses wherein the material of the dome is selected from aluminum or aluminum alloys (Column 5 lines 50-63).

With respect to claim 6 Inanaga further discloses wherein the material of the dome is selected from among magnesium and its alloys with aluminum (Column 5 lines 50-63).

With respect to claims 3-6 It would have been obvious to one of ordinary skill in the art to select any known material for the dome, as it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Examiner considers that Inanaga discloses the metals as claimed, including beryllium, aluminum, magnesium and alloys are known in the art.

With respect to claims 7-8 Liu as modified discloses wherein the dome is "thin" but without specifically disclosing the exact thickness, it would have been obvious to select any number of thicknesses depending upon the required properties of the diaphragm, the thickness would be directly related to the stiffness and rigidity of the diaphragm, And it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

3. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US6394224) in view of Mochinzuki et al (US5135582).

With respect to claim 10 Liu discloses the invention as claimed except wherein the dome is a "monoblock" dome.

Mochinzuki discloses a dome manufactured of metal which is monobloc in nature (see figure 4 and abstract).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Mochinzuki to use a monobloc dome with the device of Liu in order to provide a simpler construction using fewer components.

With respect to claim 11 Mochinzuki further discloses the use of beryllium and the frequency output for a beryllium diaphragm is able to produce a high frequency response (Column 1 lines 10-20), while not expressly disclosing the response being

extended over 40 kHz it would have been obvious to one ordinary skill to select such a  
ule, given the nature of beryllium and the structure of the diaphragm.

With respect to claim 12 Mochinzuki discloses the use of beryllium in a dome  
diaphragm for a loudspeaker, and given the shape of the diaphragm of Liu in view of  
Mochinzuki it would have been understood to be a point source with direct radiation and  
low directivity, examiner considers the pass band of over 5 octaves from 1 kHz to 40  
kHz to have been obvious given the material components and shape of the diaphragm.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to  
applicant's disclosure. Refer to form 892.

Any inquiry concerning this communication or earlier communications from the  
examiner should be directed to FORREST M. PHILLIPS whose telephone number is  
(571)272-9020. The examiner can normally be reached on Monday through Friday  
8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's  
supervisor, Walter Benson can be reached on 5712722227. The fax phone number for  
the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FP

/Edgardo San Martin/  
Primary Examiner, Art Unit 2837